Fact sheet

# A battery energy storage system for Darwin – Katherine grid

## Background

The Northern Territory Government has a plan for 50% renewable energy by 2030 while maintaining secure, reliable and affordable power.

As part of this plan the Territory Government has approved project funding to procure a large scale battery energy storage system (BESS) for the Darwin – Katherine grid.

## Why do we need a BESS?

Territory households and businesses and are taking advantage of affordable solar power with roof top solar PV installations growing by an average of 45 per cent each year since 2010.

This increase in solar energy in the grid presents challenges for maintaining security and reliability in the power system.

Cloud cover results in variability in solar generation and the power system needs to be able to rapidly respond to ensure that electricity supply is not compromised, and disruptions are minimised.

This challenge is currently met by the provision of gas-fired spinning reserve, a solution which is expensive and produces unnecessary carbon emissions though the use of gas.

The connection of large-scale solar projects to the grid also presents challenges for system security and reliability.

While the technologies exist to effectively manage these challenges, investors are looking for cost efficient ways to do so and ensure the lowest possible prices for Territorians.

## What are the benefits of the BESS

### Increased stability and reliability of power supply

Fluctuations caused by the increasing levels of household and business solar can be managed quickly and efficiently.



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### Reduction in carbon emission for the Territory and costs for Territory Generation

Reducing the need for spinning reserve could deliver both cost savings of around $6.4M and emissions reductions of about 50 000 tonnes per annum. The BESS is expected to pay for itself in approximately five years.

## Innovation to deliver cheaper, cleaner power

The BESS also provides an immediate opportunity to test the capacity for batteries to deliver a range of other power system services.

Services such as fast frequency response and “emulated” inertia have not yet been proven on a grid scale from BESS technology.

This opportunity could place the Territory in a leading position to achieve the 50% by 2030 target through the use of cheaper emerging technology.

## Enabling more renewable energy from large scale solar projects

The potential provision of services from the BESS to the private sector could be considered, reducing the cost of supplying renewable energy in the Territory.

# How will the BESS be delivered

The BESS is a large battery, capable of supplying power system services currently provided by existing gas-fired generation.

Territory Generation will undertake a competitive procurement process for the BESS, with the final size and cost to be optimised through detailed system modelling and market feedback through the procurement phase.

The BESS is expected to be operational in the second half of 2022.